REMARKS

Claims 1-32 are pending herein. These claims are directed to a "filtration cartridge" having certain physical properties as defined in each of the claims. Independent Claims 1, 2, 3, 4, 13, 23 and 32 have been amended to more particularly define the filtration cartridge of the present invention and to distinguish the same from the cartridges of the cited prior art. Support for the amendments to the claims comes from throughout the specification as filed. No new matter has been added. No new search is required.

Claims 1-6, 8-18, 20-24, 26-30, and 32 are rejected under Section 102(b) or 103(a) as being unpatentable over the teachings of Kawai et al. (U.S. Patent No. 5,158,680). In view of the amendments made herein, this rejection is respectfully traversed.

Kawai teaches a filter cartridge (called a "separator" or "element") having the structure shown in Figure 23:

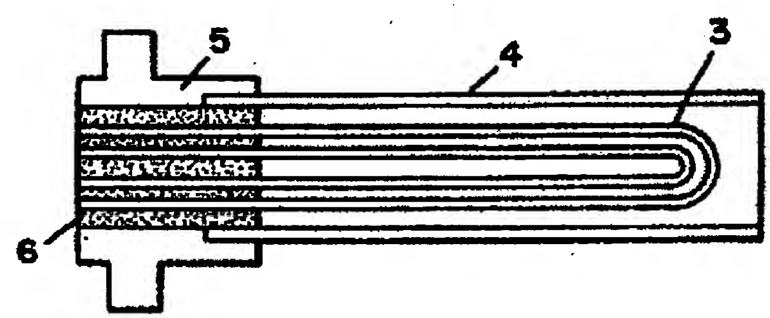

FIG. 23

Kawai teaches away from the present invention. In Kawai, the porous membrane used in the filter cartridge is made "from a material containing, as its main component, a polytetrafluoroethylene resin..." See the Abstract – lines 1-3. See also – Col. 3, lines 44-52. Likewise, as discussed in detail below, almost any resin can be used to bond the membrane to the cartridge. These fact clearly neither teach nor suggest the invention defined in pending Claims 1-32.

As described in Kawai, FIG. 23 is a sectional view of an example of an element, in which 3 denotes PTFE resin based hollow fibers, 4 denotes a protective cover, 5 denotes a housing seal member, and 6 denotes a fixing resin.

The "fixing resin" is described at Col. 8, lines 8-14 as follows:

> Any resin having a melting point which is not higher than the melting point of the [PTFE] resin as the porous membrane material can be used as a bonding resin for fixing the edges of the porous membrane. Thus, **a fluoro-resin, an olefin resin, an imide resin, an acrylonitrile resin, an amide resin or an ester resin can suitably be used as the bonding resin**. (emphasis added)

Preferred combinations of porous membrane materials and fixing resins for use in situations calling for combinations of "small rate of eluate and high heat- and chemical-resistances" are taught at Col. 8, lines 15-41 as follows:

> When an extremely small rate of eluate and specifically high heat- and chemical-resistances are required, the following fluoro-resins are preferably used as the bonding resin, as well as **the PTFE resin** having a melting point of about 327°C [NOTE: this is a published melting point for pure PTFE.]

tetrafluoroethylene-perfluoroalkylvinylether copolymer resin (melting point about 306°C);

[NOTE: Here the fixing resin melting point is 21° below the **PTFE** melting point.]

tetrafluoroethylene-hexafluoropropylene copolymer resin (melting point about 270°C);

[NOTE: Here the fixing resin melting point is 57° below the **PTFE** melting point.]

tetrafluoroethylene-ethylene copolymer resin (melting point about 260°C);

[NOTE: Here the fixing resin melting point is 67° below the **PTFE** melting point.]

vinylidene fluoride polymer resin (melting point about 174°C);

[NOTE: Here the fixing resin melting point is 153° below the **PTFE** melting point.]

chlorotrifluoroethylene polymer resin (melting point about 211°C).

[NOTE: Here the fixing resin melting point is 116° below the **PTFE** melting point.]

More preferably used are a combination of a **PTFE resin** porous membrane (melting point about 327°C) and the same resin,

[NOTE: Here the fixing resin melting point is the same as the membrane melting point.]

a combination of the **PTFE resin** porous membrane and a tetrafluoroethylene-perfluoroalkyl-vinylether copolymer resin (melting point about 306°C), and

[NOTE: Here the fixing resin melting point is 21° below the **PTFE** melting point.]

a combination of the **PTFE resin** porous membrane and a tetrafluoroethylene-hexafluoropropylene copolymer resin (melting point about 270°C),

[NOTE: Here the fixing resin melting point is 57° below the **PTFE** melting point.]

as well as a combination of a porous membrane of tetrafluoroethyleneperfluoro-alkylvinylether copolymer resin (melting point about 306°C) and

[NOTE: Here the fixing resin melting point is 21° below the **PTFE** melting point.]

a tetrafluoroethylene-hexafluoropropylene copolymer resin (melting point about 270°C).

[NOTE: Here the fixing resin melting point is 57° below the **PTFE** melting point.]

Kawai et al. neither anticipates nor makes obvious the invention defined by Claims 1-32. Clearly – the membrane resin material taught in Kawai is **PTFE** – polytetrafluoroethylene resin. The present invention does not teach, suggest, or claim the use of PTFE as the material for the membrane or the sealing means. The only allowed use of PTFE in the present invention is as the "housing" and even then, the use of PTFE as the housing material (as stated on page 11 of the published PCT specification) is not preferred.

PTFE is not a perfluorinated thermoplastic resin. Accordingly, a critical claim limitation is not taught or suggested by the Kawai et al. patent, and that patent fails to satisfy the anticipation requirements of Section 102(b) and likewise fails to create a prima facie case of obviousness under Section 103(a). Reconsideration and withdrawal of the rejection of Claims 1-6, 8-18, 20-24, 26-30, and 32 is respectfully requested.

Claims 7, 19, 25, and 31 are rejected under Section 103(a) as being unpatentable over Kawai in view of EP 0175432 A2. In view of the amendments made herein, this rejection is respectfully traversed.

The proposed combination of Kawai and EP '432 does not overcome the deficiency of the primary reference. As in Kawai, the EP '432 teaching is directed to the use of PTFE as a major component of the filter system taught therein. See page 6, lines 14-15, where membrane 14 is constructed of PTFE.

Reconsideration and withdrawal of the Section 103(a) rejection citing Kawai and EP '432 is respectfully requested.

Entry of the present amendments for purposes of appeal is respectfully requested. Entry is necessary because Applicant believes that the amended claims are now in condition for allowance notwithstanding the cited art and the Examiner's arguments thereunder.

The present amendments were not submitted at an earlier date as the Examiner made the first action in this RCE filing a Final Rejection. Thus, this response represents the Applicant's only opportunity to make the present amendments and remarks a part of the record in this RCE filing.

Entry is finally believed proper at this time because the amendments do not raise any new issues that would require further consideration and/or search, since they merely conform in scope to the claims already adequately and properly searched by the Examiner and they do not introduce any new matter.

NOTICE OF APPEAL

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the last decision of the Examiner in this application.